

Easy Pathology

— Dr. Abdelrahman Khalifa —

Urinary Bladder & Male

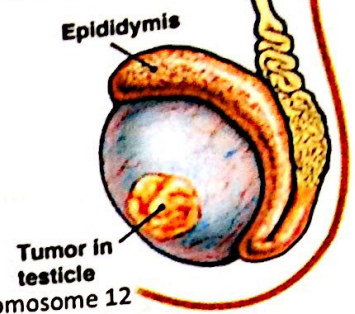


Ain Shams 2017 - 2018

VISIT...

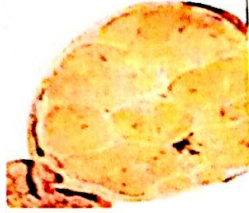
LANZAROTE
Caliente.COM

Testicular tumors



• Germ cell tumors

- The most common
- All of them are malignant (except teratoma, could be benign)
- 2 major type
- **P.F:** **Cryptorchidism** – Klienfelter 47 XXY – Intersex – Iso Chromosome 12
- **P.L:** Intratubular Germ Cell Neoplasia (**ITGCN**)

Seminoma	Non seminoma
More common 95%	Less common
Gross: large – Rounded & lobulated – grey – Soft – no N/H	Gross: small – ill defined – N/H (except teratoma)
	
Types: Classic – Spermatocytic -	Types: Teratoma – yolk sac – embryonal carcinoma – Choriocarcinoma
Tumor almost forms single type	40% came mixed e.g. (choriocarcinoma + Yolk sac)
Radio-sensetive L.N. metastasis better prognosis	Radio-resistant Blood metastasis worse prognosis

• Sex cord stromal tumors

- Rare tumors
 - **Leyding cell tumor:** secrete Androgen
 - **Sertoli cell tumor** : secretes Esrogen

• Other Tumors

- **Lymphoma** Diffuse Large B (in Old age)
- **Mesothelial** (Adenomatoid) benign, In Tunica vaginalis
- **Mesenchymal:** Leiomyoma, Lipoma, Liposarcoma

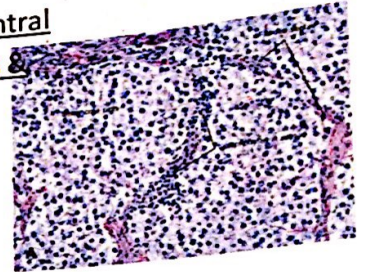
Classic Seminoma

Incidence: 30 -40 y

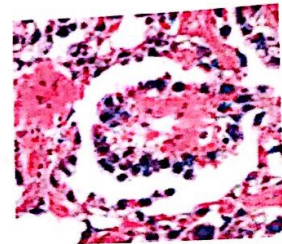
Gross: Large – Rounded – Lobulated – Grey & firm – No necrosis or hemorrhage

Micro: Solid sheets of large **rounded cells** – cytoplasm is **clear** – large central nucleus with prominent nucleoli – Fibrous stroma contain **lymphocytes** & Epithelioid granuloma

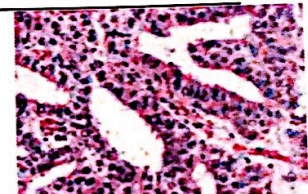
Prognosis: good

Markers: **PAP** – AFP – HCGSpermatocytic SeminomaOccur in **old age**, cells are Spermatocytic, No Lymphocytes. Prognosis is excellentYolk sac tumor (endodermal sinus)

- Incidence < 3 y.
- Cuboidal cells forming glands – papillae
- **glomeruloid structures** (Shiller-duval bodies)
- Relatively good prognosis.
- positive to **AFP** marker on tissue

Embryonal carcinoma

- Incidence around 20 y
- Large cells forming glands – papillae
- Bad prognosis.

Choriocarcinoma

- Incidence above 20 y
- Highly Malignant **cytotrophoblasts** (large clear cell with large nucleus) – **syncytiotrophoblasts** (large acidophilic cell with multiple nuclei) – necrosis & hge.
- Bad prognosis
- positive to **HCG**

Teratoma

- In Children → benign
- In Adults → malignant

Combined Germ cell tumor: 40% of testicular tumors are mixtures of Non seminomaStaging of testicular tumors:

Stage I: inside testis **Stage II:** L.N. below diaphragm **Stage III:** L.N. above diaphragm or organ metastasis

Applications of Tumor markers:

Diagnosis – Follow up (Prognosis) – Detection of metastasis

Dr. Abdelrahman Khalifa, M.D., PhD.

Benign Prostatic Hyperplasia (BPH)

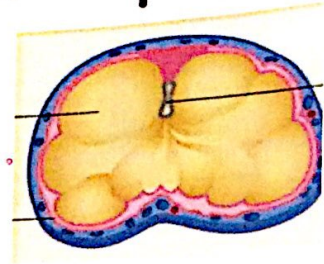
Periurethral, Androgen-dependant growth of **glands & stroma** in **old age**

Incidence: very common, above 50 y

P.F.: elevated **5 alpha reductase** → converts testosterone into **DHT** (more potent)

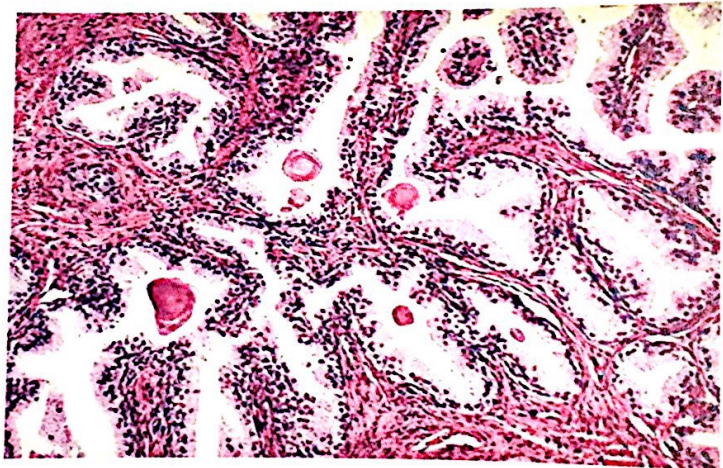
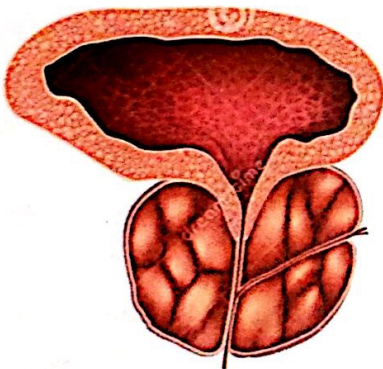
Gross:

- **Site:** **lateral & middle** lobe, mainly (**peri-urethral**) → urethral compression
- **Size:** enlarged
- **Shape:** nodular (rounded mass) → bulging of the bladder base
- **C/S:** spongy (crebriform)
- **Consistency:** firm
- **Capsule:** intact



Micro:

- **Glands:** Cystically dilated – Lined with **2 layers** & may show hyperplasia & papillae – Contain **corpora amylecia**
- **Stroma:** Proliferated fibro-muscular stroma + lymphocytes
- Areas of infarction or Squamous metaplasia



Complications:

- **Urinary tract obstruction** → Hydronephrosis, hydroureter, bladder diverticula, cystitis, stasis, infections, stones
- **Urethra:** Dysurea – Incontinence - Hematuria

C/P: **urinary** symptoms + elevated **PSA (less than 10)**

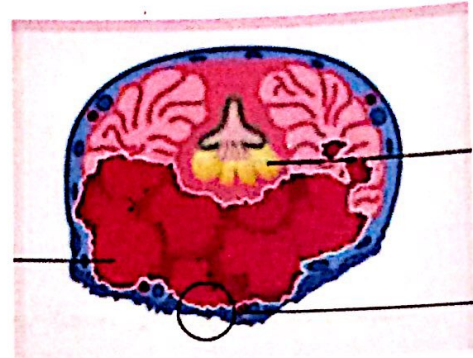
Prostatic carcinoma

Incidence: The most common malignant tumors in males >50 y

P.L.: PIN : prostatic glands lined with malignant epithelium, large nuclei, prominent nucleoli, Basement membrane is intact

Gross:

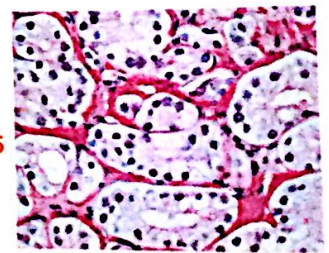
- **Site:** **Peripheral** (mainly **posterior**)
- **Size:** enlarged
- **Shape:** irregular variable nodules
- **C/S:** grey, with N/H
- **Consistency:** firm
- **Capsule:** infiltrated



Micro:

Prostatic Adenocarcinoma : malignant glands – lined with **single layer of cells** with absent basal layer – large nuclei- prominent nucleoli

- well differentiated : **small** glands- closely packed
- moderate differentiated: **Large** glands – spaced – **Crebriform** or papillae formation
- Poorly differentiated: **Solid** sheets

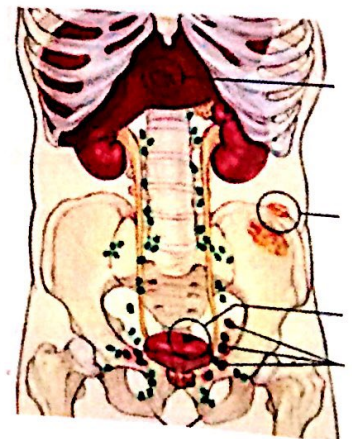


Gleason grading: based on **glandular pattern** by low power. Graded from **1 – 5**

Three grade system: **1: well** **2: moderate** **3: poorly differentiated**

Complications:

- Spread through paravertebral veins → (**bone** & lumbar vertebrae with **ostoblastic** lesions is common → elevated **alkaline ph**)
- Spread Local , Lymphatic & **perineural**
- Complications of obstruction (*similar to hyperplasia? Enumerate*)



Diagnosis:

transRectal examination & biopsy

elevated **PSA (more than 10)**

elevated **Acid phosphatase** (metastasis)

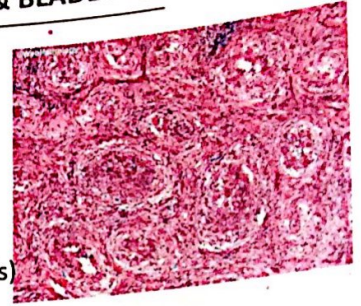
Alkaline phosphatase (Bone metastasis)

Hormone dependence: Tumor is **Androgen-dependant**. Treated by **Orchidectomy** and Estrogen.

Dr. Abdelrahman Khalifa, M.D., PhD.

Orchitis:

- Acute non Suppurative:** Mumps (Lymphocytic)
- Syphilitic:** tertiary syphilis → **anterior scrotal sinus** & fibrosis
- TB:** 2ry TB of epididymis → caseation → **posterior sinus**
- Grnulomatus orchitis:** Autoimmune . (granuloma of mixed inflame cells)



Congenital:

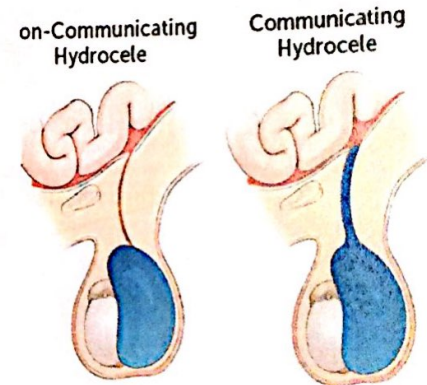
- Cryptorchidism** → atrophy , precancerous .
- Congenital inguinal hernia**
- Intersex**

Hydrocele: serous fluid in tunica vaginalis (inflammation – Tumors – generalized edema- unknown)

Hematocele: blood in tunica vaginalis (Trauma – Tumors)

Varicocele: dilated tortuous pampiniform veins → infertility

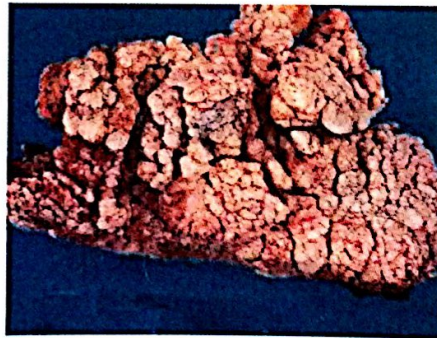
Spermatocele: cystic dilatation of **spermatic** cord



Tumors of the Penis:

Benign Sq. C. P. (Condyloma accuminatum) by **HPV 6, 11**

Malignant **HPV 16, 18** (CIS 'bowens disease' - Sq. C. C.)



Gonorrhea: Suppurative inflammation , STD gonococci

Spread to male genital → fibrosis & sterility , Spread to kidney → pyelonephritis

Prostatitis:

Acute Suppurative: KEEPS + Gonococi

Chronic non specefic: following acute

TB: 2ry

Grnulomatus autoimmune

Bladder carcinoma



Incidence: A common malignant tumors in Egyptian males >40 y

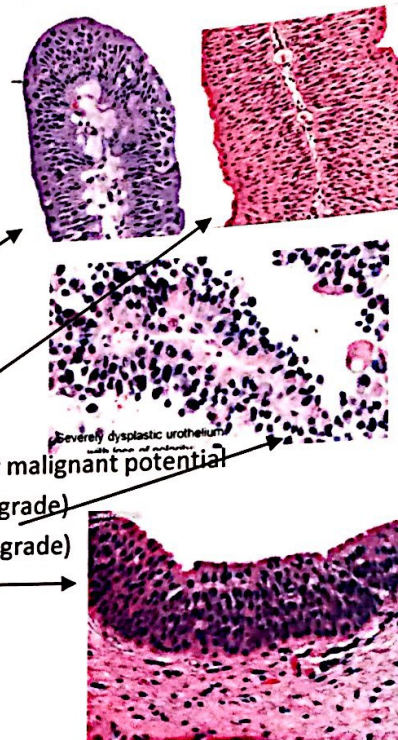
P.F.:

- **Smoking**
- **Stones** → Chronic cystitis & squamous metaplasia
- **Shistosoma** → Tryptophan - Ova (trauma) – Metaplasia (Sq. metaplasia , Leukoplakia & cystitis glandularis)
- **Carcinogens** : Aniline dye
- **Congenital**: (ectopia vesica)

Site: *Trigone* → ureteric obstruction

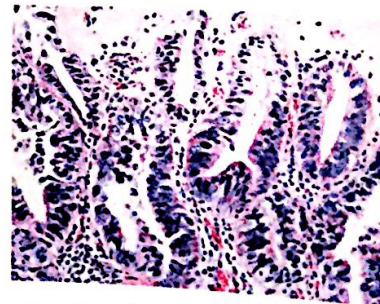
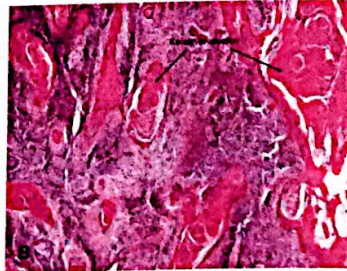
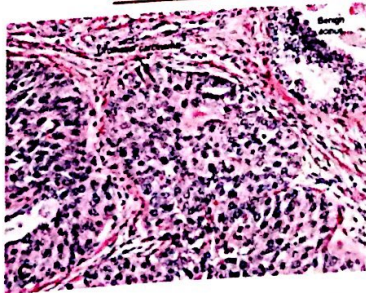
Types:

- **Invasive Transitional cell carcinoma (TCC)**
 - 90 % , common in males , >50 y
 - P.L.:
 - **Papillary urothelial neoplasm**
 - Papilloma
 - Papillary urothelial neoplasm of low malignant potential
 - Papillary urothelial carcinoma (Low grade)
 - Papillary urothelial carcinoma (high grade)
 - **Flat CIS** : multifocal → progress to invasive
 - Gross picture of Inasive TCC carcinoma :
 - Papillary
 - Solid Ulcerative
 - Micro:
 - Papillary → infiltrating lamina propria & muscle
 - Solid sheets of TCC → infiltrating down to muscle layer
 - Both may show Squamous or glandular differentiation



Prognosis depends on invasion

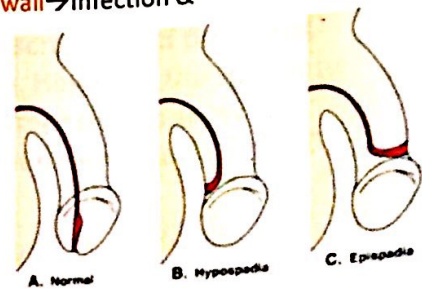
- **Squamous cell carcinoma** : common with **bilharziasis**. Large bulky mass
- **Adenocarcinoma**: on top of **urachal** remnant , or cystitis **glandularis**



N.B. Mesenchymal tumors: Leiomyoma – Leiomyosarcoma – Sarcoma botryoides (in children)

Congenital

- Ectopia vesica (Exostrophy):** defective bladder & ant. abdominal wall → infection & metaplasia
- Patent urachus:** Tract between bladder & umbilicus
- Hypospadias:** urethral opening in the penis (**ventral**)
- Epispadias:** urethral opening in the penis (**dorsum**)
- Congenital urethral valve**



Cystitis

P.F.:Similar to Pyelonephritis (enumerate?)

Types:

- **Acute**
 - Thick wall, congested, **ulcers** & hemorrhage
 - Clinical: Dysurea, pyurea, frequency
- **Chronic non specific**
 - Following acute
 - Thick wall, fibrosis, granular
 - **Interstitial:** Transmural inflammation & fibrosis (more in females)
 - **Polypoid:** edema → mucosal polyps
 - **Malakoplakia:** rare, immune suppressed. Yellow soft nodules (giant cells containing calcified bacteria 'Michaelis-Gutman body')
- **Chronic specific**
 - Bilharzial
 - TB: from 2ry TB → bladder ulcers + caseating granulomas

Fate:

Epithelial changes (Similar to bilharzial cystitis ? enumerate)

Hematuria

- **General causes** (e.g. Hemorrhagic blood diseases, CVC)
- **Local**
 - **C**ongenital polycystic kidney
 - **I**nflammations
 - Renal: **N**ephritic, **p**yelonephritis
 - Bladder: **c**ystitis, Bilharziasis (terminal Hematuria)
 - **S**tones
 - **T**umors
 - Renal: **RCC**, Wilms
 - Bladder: papilloma, **c**arcinoma
 - Prostatic carcinoma & hyperplasia



Dr. Abdelrahman Khalifa, M.D., PhD.

1) A 23-year-old healthy man has been unable to father a child. He and his wife have a workup for infertility. His wife's reproductive function is normal. On physical examination both his testes are palpable in the scrotum and the testes and scrotum are normal in size, with no masses palpable. However, the spermatic cord on the left has the feel of a "bag of worms". Laboratory studies show oligospermia. Which of the following conditions is this man most likely to have?

- A. Hydrocele
- B. Testicular torsion
- C. Spermatocoele
- D. Varicocele
- E. Seminoma

2) A 72-year-old man gets up several times during a football match to go to the restroom to urinate, even though he has had only one beer. This is a problem that has plagued him for 4 years. When he visits his physician for a checkup, on physical examination he has a diffusely enlarged prostate palpated on digital rectal examination. Laboratory studies show his serum prostate specific antigen is 6 ng/mL. Which of the following pathologic findings is most likely to be present in this man?

- A. Adenocarcinoma
- B. Acute inflammation
- C. Multiple infarctions
- D. Nodular hyperplasia
- E. Granulomas

3) A 77-year-old man has a routine check-up by his physician. The only physical examination finding is slight nodularity of his prostate on digital rectal examination. Laboratory studies show a serum prostate specific antigen of 6 ng/mL. A prostate biopsy is performed and on microscopic examination shows prostatic intraepithelial neoplasia (PIN). Which of the following is the best medical care option to offer this man?

- A. Radical prostatectomy
- B. Multiagent chemotherapy
- C. Transurethral prostate resection
- D. Monitoring PSA levels
- E. Nothing

4) A 40-year-old man has noted gradual enlargement of his scrotum, more on the right side, for the past 2 years. There is no associated pain, but the size is becoming uncomfortable. Physical examination reveals that the right side of the scrotum is enlarged to three times the size of the testis palpable on the left. This mass transilluminates. There is no tenderness on palpation. There is no inguinal lymphadenopathy. An ultrasound reveals a 5 cm thin-walled cystic fluid-filled area in the region of the right testis. Which of the following is the most likely diagnosis?

- A. Seminoma
- B. Torsion
- C. Hydrocele
- D. Varicocele
- E. Orchitis

5) In which of the following regions of the prostate are these adenocarcinomas most likely to arise?

[MALE & BLADDER]

- A. Anterior fibromuscular stroma
- B. Central zone
- C. Peripheral zone
- D. Periurethral zone
- E. Transitional zone

6) Which of the following types of testicular neoplasm is most likely to respond best to radiation therapy?

- A. Choriocarcinoma
- B. Embryonal carcinoma
- C. Seminoma
- D. Teratoma
- E. Yolk sac tumor

7) A 2-year-old boy is brought to the physician because his mother has observed that his scrotum is no longer symmetrical. On physical examination the child has enlargement of the left testis. An ultrasound scan shows a 2 cm solid mass within the body of the testis. Laboratory studies show a serum alpha-fetoprotein of 226 ng/mL. Which of the following neoplasms is this child most likely to have?

- A. Leydig cell tumor
- B. Neuroblastoma
- C. Rhabdomyosarcoma
- D. Teratoma
- E. Yolk sac tumor

8) A 36-year-old woman has urinary frequency with dysuria for the past 4 days. On physical examination she has no flank pain or tenderness. A urinalysis reveals sp. gr. 1.014, pH 7.5, no glucose, no protein, no blood, nitrite positive, and many WBC's. She has a serum creatinine of 0.9 mg/dL. Which of the following is the most likely diagnosis?

- A. Lupus nephritis
- B. Urinary lithiasis
- C. Acute cystitis
- D. Malakoplakia
- E. Urothelial carcinoma

9) Which of the following congenital urinary tract anomalies is most likely to carry the risk of carcinoma?

- A. Unilateral renal agenesis
- B. Bladder exstrophy
- C. Bilateral ureteral duplication
- D. Horseshoe kidney
- E. Medullary sponge kidney

12) A 59-year-old man notes blood in his urine for the past week. On physical examination there are no abnormal findings. A urinalysis confirms the presence of blood, but no proteinuria or glucosuria. A urine culture is negative. A cystoscopy is performed, and a 3 cm exophytic mass is seen in the dome of the bladder. A biopsy of this mass is performed and microscopic examination reveals fibrovascular cores

- covered by a thick layer of transitional cells. Which of the following risk factors is most likely to have led to development of this lesion?
- A. Diabetes mellitus
 - B. Recurrent urinary tract infection
 - C. Therapy with methicillin
 - D. Cigarette smoking
 - E. Tuberous sclerosis

Cases (RENAL)

1) A 7-year-old boy recovering from impetigo (Skin infection). Culture of the skin lesion revealed A β -hemolytic streptococcus. He received antibiotics. After 2 weeks he developed malaise with nausea and a slight fever and he passed dark smoky urine and he had mild facial oedema. Lab studies revealed increased ASOT.

- A) What is the possible diagnosis?
- B) What is his possible outcome?
- C) Immunofluorescence picture?
- D) EM picture?

2) After an attack of upper respiratory tract infection a 25-year-old woman experienced sudden onset of fever, malaise and nausea. On physical examination her blood pressure was 140/90mmHg. Urine analysis revealed 1+ proteinuria, 4+ hematuria. A renal biopsy was performed and revealed marked glomerular hypercellularity with neutrophils in capillary loops.

- A) What is the possible diagnosis?
- B) What is his possible outcome?

3) A 47-year-old man has had hemoptysis and decreased urine output over the past 10 days. On physical examination his blood pressure was 180/100mmHg. Urine analysis revealed 1+ proteinuria, 4+ hematuria. A renal biopsy was performed and revealed normocellularity of the glomerular tuft with marked proliferation of parietal epithelial cells and vascular malignant hypertensive changes.

- A) What is the possible diagnosis?
- B) What is his possible outcome?
- C) What is the Immunofluorescence picture?

4) A 3-year-old previously healthy boy had swollen lower limbs and periorbital oedema, he was normotensive. His urine analysis revealed 6gm proteinuria/24 hours, no RBCs or WBCs. A renal biopsy was done and EM revealed diffuse fusion of epithelial cell foot processes with no deposits.

- A) What is the possible diagnosis?
- B) What is his possible outcome?
- C) What is the expected Immunofluorescence result?
- D) What is the Cause of oedema?

5) A 40-year-old man had swollen lower limbs and periorbital oedema. He had normal blood pressure. His urine analysis revealed 7 gm proteinuria/24 hour. A renal biopsy was done and LM revealed diffuse uniform thickening of capillary walls, and IFM revealed granular fluorescence of capillary walls for IgG and C3.

- A) What is the possible diagnosis?
- B) What is his possible outcome?
- C) What is the EM picture?
- D) What is the Cause of oedema?

1-Dysuria, frequency, urine incontinence, acute urine retention in an old man are symptoms suggestive of:

- a) Chronic renal failure
- b) Prostatic carcinoma
- c) Benign prostatic hyperplasia
- d) Renal stone
- e) All of the above

2-Elevated serum level of which of the following markers indicates the possibility of prostatic cancer:

- a) Acid phosphatase
- b) Human chorionic gonadotropin
- c) Alpha fetoprotein
- d) Prostatic specific antigen
- e) Alkaline phosphatase

3-Elevated of the serum level of alkaline phosphatase in patient with prostatic carcinoma denotes:

- a) High tumor grade
- b) Localized spread
- c) Metastatic bone deposits
- d) Associated infection
- e) None of the above

4-Which of the following types of testicular neoplasm is most likely to respond best to radiation therapy?

- a) Choriocarcinoma
- b) Embryonal carcinoma
- c) Seminoma
- d) Teratoma
- e) Yolk sac tumor

5-In which of the following regions of the prostate are these adenocarcinomas most likely to arise?

- a) Anterior fibromuscular stroma
- b) Central zone
- c) Peripheral zone
- d) Periurethral zone
- e) Transitional zone

6-Serum level of HCG is characteristically elevated in:

- a) Sertoli cell tumor
- b) Yolk sac tumor
- c) Choriocarcinoma
- d) Embryonal carcinoma
- e) Teratoma

7-Which of the following testicular tumor is a benign one:

- a) Seminoma
- b) Endodermal sinus tumor
- c) Lymphoma
- d) Mature teratoma
- e) Choriocarcinoma

8-Schiller-duval body is a characteristic microscopic finding in:

- a) Seminoma
- b) Yolk sac tumor
- c) Teratoma
- d) Choriocarcinoma
- e) Embryonal carcinoma

9-All of the following tumors are non seminomatous germ cell testicular tumors except:

- a) Choriocarcinoma
- b) Teratoma
- c) Leyding cell tumor
- d) Embryonal carcinoma
- e) Yolk sac tumor

10-All of the following is true about carcinoma in situ (CIS) of the urinary bladder except:

- a) It is commonly multifocal
- b) CIS cells can be detected in urine cytology
- c) CIS cells are tightly cohesive
- d) Without treatment it usually transform to invasive carcinoma

11-Malakoplakia refers to :

- a) A benign urinary bladder neoplasm
- b) A pattern of chronic non specific cystitis
- c) A type of urinary bladder carcinoma
- d) A congenital urinary tract anomaly

12-On a routine physical examination of a 70-year-old male you palpate a firm nodule in the prostate via rectal examination. If the biopsy of this lesion shows the microscopic appearance of small crowded glands containing cells with prominent nucleoli in the nucleus the diagnosis is probably:

- a) Adenocarcinoma of the prostate
- b) Benign prostatic hyperplasia
- c) Chronic prostatitis
- d) Metastatic transitional cell carcinoma
- e) Recent infarction of prostate

13-A 69-year-old male presents with urinary frequency and difficulty in starting and stopping urination. Rectal examination reveals enlarged firm prostate. A needle biopsy reveals increased number of glandular and stromal elements. Prominent nucleoli or back to back glands are not seen. What is the most likely diagnosis?

- a) Acute prostatitis
- b) Chronic bacterial prostatitis

- c) Granulomatous prostatitis
- d) Benign prostatic hyperplasia
- e) Prostatic adenocarcinoma

14-A 2-year-old boy has a 2 cm solid mass within the right testis. Laboratory studies reveal elevated serum alpha-fetoprotein. Which of the following neoplasm is this child most likely to have?

- a) Leyding cell tumor
- b) Neuroblastoma
- c) Teratoma
- d) Rhabdomyosarcoma
- e) Yolk sac tumor

15- A 29-year-old man complained of vague scrotal pain. The right testis is enlarged and showed a circumscribed mass. Biopsy revealed uniform sheets and nests of round cells having distinct cell boundaries and round nuclei. Dense lymphocytes are seen between these masses. Which of the features is the most characteristic of this lesion?

- a) Excellent response to radiation therapy
- b) Elevation of serum testosterone
- c) Elevation of alpha fetoprotein
- d) Elevation of HCG
- e) Likelihood of extensive metastases early in the course

16- A 20-year-old male has a penile discharge with some pain on urination that he has noted for the last two days. Culture of the penile discharge reveals Neisseria gonorrhea. Complication that he may experience as a consequence of this infection include all of the following except:

- a) Urethral stricture
- b) Epididymitis
- c) Orchitis
- d) Prostatitis
- e) Cystitis

17-10. A 77 year old male has a prostate biopsy that demonstrates prostatic intraepithelial neoplasia (PIN). What would be the best medical care option to offer this patient:

- a. Radical prostatectomy
- b. Multiagent chemotherapy
- c. Transurethral prostate resection
- d. Monitoring of PSA levels
- e. Nothing

18-A 40 year old male has noted gradual enlargement the scrotum, more on the right side, for the past two years. There is no associated pain, but the size is becoming uncomfortable. Physical examination reveals that the right side of the scrotum is enlarged to three times the size of the testis palpable on the left. This mass transilluminates. There is no tenderness. There is no inguinal lymphadenopathy, An ultrasound reveals a 5 cm thin-walled cystic fluid-filled area in the region of the right testis. He most likely has a (an):

- a. Seminoma
- b. Torsion

- c. Hydrocele
- d. Varicocele
- e. Syphilitic orchitis

19- Physical examination of a 3 day-old male infant reveals urine leaking from the area of the umbilicus, What is the possible cause of this condition?

- a. Bladder exostrophy
- b. Hypospadias
- c. Epispadias
- d. Patent urachus
- e. polycystic kidney

20-A 2 year old boy has a 2cm. solid mass within the right testis. Laboratory studies reveal elevated serum alpha-fetoprotein. Which of the following neoplasms is this child most likely to have?

- a. Leydig cell tumor
- b. Neuroblastoma
- c. Teratoma
- d. Rhabdomyosarcoma
- e. Yolk sac tumor

21-A 25 year old male has normal descended testes that appear normal in size on physical examination. If only Sertoli cells were present in the seminiferous tubules on biopsy, then this patient would most likely have:

- a. Infertility
- b. Germ cell tumor
- c. Orchitis
- d. Leydig cell tumor
- e. A mildly decrease sperm count

22-A 72 year old male presents with frequency of micturition. When he visits his physician for a checkup, an enlarged, nodular prostate is palpated on digital rectal examination. His serum pro specific antigen is 5ng/MI. Which of the following pathologic findings is most likely to be present on prostate biopsy?

- a. Adenocarcinoma
- b. Acute inflammation
- c. Multiple infarctions
- d. Nodular hyperplasia
- e. Granulomatous inflammation

23-A 19 year old male notes the sudden onset of severe discomfort in his scrotum late one evening. No position is comfortable. He has a friend drive him to the emergency room, where the examining physician notes that the left testis is slightly enlarged and exquisitely tender. There is no inguinal lymphadenopathy. His vital signs include temperature 36 C, respirations 22, pulse 86, and blood pressure 100/65 mm Hg. Which of the following conditions is most likely to be present?

- a. Choriocarcinoma of the testis
- b. Varicocele
- c. Ureteral lithiasis
- d. Spermatic cord torsion
- e. Hydrocele

24-A 20 year old male university student has a penile discharge with some pain on urination that he has noted for the last two days Culture of the penile discharge reveals Neisseria gonorrhoeae Complications that he may experience as consequence of this infection include all of the following EXCEPT

- a. Urethral stricture
- b. Epididymitis

- c. Orchitis
- d. Prostatitis
- e. Cystitis

25-A 9-year-old boy suddenly develops severe testicular pain. During surgery his testis was found to be markedly haemorrhagic due to testicular torsion. This could be a testicular infarction because of:

- a. Venous occlusion
- b. Septic infarction
- c. The collateral blood supply of testis
- d. The dual blood supply of the testis.

26-A 29-year-old man complained of vague scrotal pain. The right testis is enlarged & showed a circumscribed mass. Biopsy revealed uniform sheets & nests of round cells having distinct cell boundaries & round nuclei with prominent nucleoli. Dense lymphocytes are seen between these masses. Which of the following features is the most characteristic of this lesion?

- a. Excellent response to radiation therapy
- b. Elevation of serum testosterone
- c. Elevation of alpha fetoprotein
- d. Elevation of human chorionic gonadotrophin
- e. Likelihood of extensive metastases early in the course.

27-On physical examination of a 38-year-old male, you palpate a left inguinal mass which is consistent with a cryptorchid testis. The right testis is palpated in the scrotum and is of normal size. What should you do about the cryptorchid testis:

- a. Put it into the scrotum surgically
- b. Remove it along with the opposite testis
- c. Remove it
- d. Put the patient on testosterone therapy
- e. Perform a chromosome analysis

28-On a routine physical examination of a 70-year-old male, you palpate a firm nodule in the prostate via rectal examination. If the biopsy of this lesion shows the microscopic appearance of small, crowded glands containing cells with prominent nucleoli in the nuclei, the diagnosis is probably:

- a. adenocarcinoma of the prostate
- b. Benign prostatic hyperplasia
- c. Chronic prostatitis
- d. Metastatic transitional cell carcinoma
- e. Recent infarction of prostate

29-A 23 year old healthy male has a workup for infertility and is found to have a low sperm count. Both testes are palpable in the scrotum and the testes and scrotum are normal in size, but the spermatic cord on the left has the feel of a "bag of worms". The best diagnosis is:

- a. Hydrocele
- b. Testicular torsion
- c. Spermatocele
- d. Varicocele
- e. Seminoma

Cases

1-A 70-year-old male presents by severe back pain. Plain x-ray reveals multiple bone forming lesions in the dorsal and lumbar vertebrae. Laboratory investigations reveal raised serum acid and alkaline phosphatases.

- What is the most likely provisional diagnosis?
- What are the suggested investigations to confirm this diagnosis?
- If a biopsy is taken from one of these vertebral lesions, what is the confirmatory stain asked for?
- Explain how this lesion reached the vertebrae?

2-An 80-year-old male presents by attacks of urinary retention and dysuria. Pelvic sonography reveals enlarged prostate. Laboratory investigations reveal high serum level of PSA. One month later, the patient undergone bilateral orchidectomy.

- What is your diagnosis?
- Explain the grading system used in reporting this case.
- What is the benefit of orchidectomy in this patient?

3- A 3-year-old boy was brought to pediatric clinic by his mother who noticed left scrotal swelling. On examination, a firm left testicular mass was felt. Left orchidectomy showed an ill defined yellowish mass with mucinous cut surface.

- What is the most likely diagnosis and how to confirm it by laboratory investigation?
- Describe the microscopic picture of this lesion.
- Mention other tumours of the same category arising in the testis?

4- A 75-year-old man passed away at Demerdash hospital. During post mortem examination, samples were taken from different organs. A single focus, 0.5cm in diameter, consisting of closely packed acini lined by uniform cells with large prominent nucleoli, was detected in the prostate.

- What is the diagnosis of this focus?
- Do you think this lesion is the cause of death? Why?
- If he is still living, what are the steps needed for diagnosing such lesion?

5- A 70-year-old man presents with left testicular mass. Biopsy reveals diffuse atypical lymphoid infiltrate replacing the testicular tissue.

- What is your diagnosis? How to confirm it?
- What is the expected microscopic type?
- List five other sites for the same lesion.

6- A 30-year-old man complains of heaviness in the scrotal area of 1-month duration. He does not have any trauma or any medical history. On examination, there is a 5cm firm, nontender area inside the right scrotum. There is no lymphadenopathy.

- What is the most likely diagnosis?
- What are the possible risk factors?
- Choose the commonest tumour and mention its microscopic variants in the diagnosis?
- How can detection of germ-cell tumour products in the serum help?
- What are the methods of spread of malignant tumours of testis?

7- A 65-year-old male complains of dysuria and occasional haematuria. Examination revealed enlarged prostate. The doctor told him that it's a condition which affects many old men and nothing to worry about. His serum level of PSA was normal.

- a. What is the most likely diagnosis?
- b. What is the pathogenesis of this disease?
- c. Does it predispose to malignancy?
- d. Which part of the prostate is the most affected?
- e. What are the pathologic effects?

8-A 70-year-old male presents with dysuria and hematuria. Clinical examination reveals enlarged hard prostate by PR. Serum PSA was increased.

- a. What is the most likely diagnosis?
- b. What are the commonest sites of metastasis?
- c. What are the sites locally infiltrated by the tumour?
- d. Give short account on histologic grading system
- e. What are the other methods of diagnosis?